In the United States Patent & Trademark Office

Application for Patent

Tamper Resistant Weighted Rodent and Insect Bait Station

Invented by:

Ethan Vickery

Certificate of Express Mailing

I hereby certify that this paper or fee is being deposited with the United States Postal Service via "Express Mail Post Office to Addressee", addressed to Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA, 22313-1450, on this 20th day of MARCH, 2004, pursuant to 37 C.F.R. 1.10, with an Express Mailing Label No. EV 230 905 442 US.

Patrick Stellitano

Technical Field of the Invention

[1000] The present invention relates to the field of rodent and insect bait stations.

Background of the Invention

[1001] Bait stations are used to house poisonous bait that kill rodents or insects. Typical rodent bait station configurations are described in United States Patents numbered 5,448,852 and 5,040,327. In summary, a typical rodent bait station comprises an enclosure containing poisonous bait. One or more doorways into the enclosure is provided for the rodent to enter and eat some of the bait. The poisonous bait causes the rodent to die after leaving the bait station. Partitions within the enclosure prevent harm to a child by forming angles around which a child cannot reach to touch the bait. A lid that can only be opened with a special tool is provided to replace the bait, thereby making the bait station tamper resistant. Insect bait stations are similar in operation.

[1002] A bait station must be secured to prevent it from easily being tipped over or moved. The conventional manner for securing a bait station is to bolt it to something heavy such as a concrete structure or patio block. For example, a long bolt can be inserted through the base of the bait station and through a hole in a patio block. Then a washer and nut is screwed onto a threaded end of the bolt to secure the bait station to the patio block. The weight of the patio block then holds the bait station in place. Such methods of securing a base station are inconvenient and what is needed is a more convenient method for securing a base station.

Summary of the Invention

[1003] The present invention overcomes prior art limitations by providing an easy method to secure a bait station. According to one aspect of the invention, a bait station is provided with a receptacle in which a patio block or other heavy material can be inserted to weight the base station. According to another aspect of the invention, for ease of manufacture, a separate unit to which the bait enclosure of the bait station can be connected forms the receptacle that holds the block, weight or heavy material. According to another aspect of the invention, an existing bait station can be adapted to be secured to the receptacle that holds the weight using an easily implemented adapting mechanism designed there for. According to yet another aspect of the invention a stake is provided to secure the bait station to the ground as an alternative to using a weighting structure.

[1004] The foregoing has outlined rather broadly aspects, features and technical advantages of the present invention in order that the detailed description of the invention that follows may be better understood. Additional aspects, features and advantages of the invention will be described hereinafter. It should be appreciated by

those skilled in the art that the disclosure provided herein may be readily utilized as a basis for modifying or designing other structures for carrying out the same purposes of the present invention. Persons of skill in the art will realize that such equivalent constructions do not depart from the spirit and scope of the invention as set forth in the appended claims, and that not all objects attainable by the present invention need be attained in each and every embodiment that falls within the scope of the appended claims.

Brief Description of the Drawings

[1005] For a more complete understanding of the present invention, and the advantages thereof, reference is now made to the following descriptions taken in conjunction with the accompanying drawings, in which:

[1006] Figure 1 is a drawing of an embodiment of the invention.

[1007] Figure 2 is a drawing of an embodiment of the invention.

[1008] Figure 3 is a drawing of a connecting assembly.

[1009] Figure 4 is a drawing of a connecting mechanism.

[1010] Figure 5 is a drawing of a connecting mechanism.

[1011] Figure 6 is a drawing of a stake appendage mechanism.

[1012] Figure 7 is a drawing of a receptacle for holding a weighting object. Figure 8 is a top view drawing of a bait station of the present invention. Figure 9 is a side view drawing of a bait station of the present invention.

Detailed Description of the Preferred Embodiments

[1013] A preferred embodiment of the present invention is shown in Figure 1. A conventional enclosure 1000 for a bait station is molded from a suitable plastic material as a unit with a receptacle 1200. Receptacle 1200 is dimensioned to receive a weighting structure 1400, such as an ordinary commercially available patio block that

can slide into the receptacle 1200. In this way, no special securing apparatus, such as a nut, bolt, and washer assembly, is required to secure the bait station to the patio block or other weighting structure. Moreover, the patio block can be removed from the bait station by simply removing it from the receptacle 1200, without the necessity of disassembling a separate securing mechanism such as the aforementioned bolt assembly. Further, one or more lip mechanisms 1300 can be provided to secure the weight in place within receptacle 1200. Alternative methods may be employed to secure the weight in place within the receptacle such as described with reference to Figure 7.

[1014] Another preferred embodiment of the invention is shown in Figure 2. A conventional bait station 2000 is molded separately from a receptacle 2200 for ease and lower cost of manufacture. Bait station 2000 may then be permanently or removably connected to receptacle 2200. As described above with reference to Figure 1, receptacle 2200 is designed to hold a weighting structure such as a patio block 2400, which can be secured in place with lip mechanisms 2300, or functionally comparable mechanism.

[1015] As an alternative, or in addition to, the lip mechanisms 1300, 2300 shown in Figures 1 or 2, an end cap that covers and encloses the open end of receptacle 1200, 2200 may be employed to secure the weighting material therein. This facilitates enclosing the weighting material within a cavity formed by receptacle 2200, enabling insertion and enclosure of a patio block, rock, gravel, sand, concrete, or other material of sufficient density to weight the bait station.

[1016] One method for securing bait station 2000 to receptacle 2200 is to use an adhesive cement to bond the base 2020 of bait station 2000 to an upper surface 2220 of receptacle 2200. A method for removably securing bait station 2000 to receptacle

2200 is to provide one or more nut and bolt assemblies, as shown in Figure 3. A bolt 3010 is inserted upward through a washer 3020 and through upper surface 2220 of receptacle 2200, through a second washer 3030 and through base 2020 of bait station 2000, and is secured with a nut 3040. A plurality of nut and bolt assemblies so installed and distributed over the area of base 2020 may be provided for greater strength and durability. Clearly, the bolts can also or alternatively be inserted downward through the base through the upper surface of the receptacle.

[1017] An alternative method for securing bait station 2000 to receptacle 2200 is by providing a tongue and groove mechanism as shown in Figure 4. On the underside of the base 2020 of bait station 2000 is a tongue 4020. Tongue 4020 is dimensioned and positioned to mate with a groove 4040 — shown, for clarity, at right angles to the direction of tongue 4020 — formed in upper surface 2220 of receptacle 2200. When tongue 4020 is inserted through groove 4040 a lip 4050 of tongue 4020 causes the bait station 2000 to be secured to receptacle 2200. A plurality of tongue and groove mechanisms so installed and distributed over the area of base 2020 may be provided for greater strength and durability. Clearly, the grooves may also or alternatively be formed in the base of the enclosure to receive tongues formed to protrude from the upper surface of the receptacle.

[1018] Another embodiment for securing bait station 2000 to receptacle 2200 is to provide one or more protrusions 5050, as shown in Figure 5. Protrusion 5050 extends upward from the upper surface 2220 of receptacle 2200, through a hole 5060 in the floor 2020 of bait enclosure 2000. A plurality of protrusions 5050 and mating holes 5060 for receiving the protrusions so formed and distributed over the area of base 2020 may be provided for greater strength and durability. Clearly, the protrusions may also or

alternatively extend downward from the base of the enclosure and protrude into holes provided in the receptacle

[1019] Another embodiment of the invention is shown in Figure 6, where an alternative to providing a receptacle for a weighting structure is provided. One or more stakes 6010 are formed as a part of a unitary whole with bait station enclosure 2000. Stakes 6010 are directed downward from the base 2020 of bait station 2000 into the earth, thereby securing the bait station in place. This may be preferable to use of a weighting structure in certain situations. A plurality of stakes 6010 distributed over the area of base 2020 may be provided for greater strength and durability. By forming the stakes as a unitary part of the bait enclosure, separate stakes need not be provided.

[1020] Figure 7 shows an alternative configuration of a receptacle 7200 for holding a weighting structure such as a patio block for securing a bait enclosure. This configuration requires less material for manufacture. As an alternative to molding lip mechanisms, as shown in Figures 1 and 2, a locking bar may be inserted through slots 7270 to secure the weighting structure within receptacle 7200. Holes 7250 are shown for securing receptacle 7200 to a bait enclosure using methods described above with reference to Figures 2 through 6.

[1021] A top view of a preferred embodiment of the present invention is shown in Figure 8. An enclosure 8000 for a bait station is preferably molded from a suitable plastic material as an integral unit. A lid 8200 shown in the open position in Figure 8 is molded to the enclosure 8000, folding at line 8801 Formed in lid 8200 are two sets of locking retention elements 8001 which, when the lid is

closed, interlock with corresponding sets of deflection elements 8002 integrally molded into the enclosure 8000.

[1022] Formed in bait station 8000 are two doors 8700, one in each sidewall of the station, to enable rodents and other pests, such as roaches, to enter and exit the enclosure. Interior to the enclosure is a bait chamber formed by walls 8900 that extend vertically from the bottom of enclosure 8000 up to the top of the enclosure flush with the surface of lid 8200 when lid 8200 is closed. A door 8500 to the bait chamber enables the rodent or pest to enter and access the poisonous bait placed in the bait chamber in region A.

[1023] Figure 9 is a side view of a preferred embodiment of the present invention, showing side door 8700 and interior wall 8900. Note that the orientation and dimension of the enclosure doors 8700 and bait chamber door 8500 in wall 8900 is such that no child could insert his or her hand into the enclosure 8000 and reach the bait. Also note that the door 8500 exhibits a threshold 9600 that is raised slightly, about a half inch from the bottom of enclosure 8000, to prevent liquid from entering the bait chamber.

[1024] At the top of enclosure 8000 is an exterior lip 8300 that protrudes upward from a surface 9200 and extends around at least most of the outer periphery of the top of the enclosure. A second lip 9100 also protrudes upward from surface 9200 and extends around at least most of the periphery of the top of enclosure 8000, following a path a distance t from the edge of lip 8300. At the top of lid 8200 is also a lip 8201 extending around at least most of the periphery of lid 8200. When lid 8200 is closed to cover enclosure 8000, then lip 8201 fits

between lips 8300 and 9100. More particularly, the outer most edge 8202 of lip 8201 fits snugly against or closely adjacent to the inner most edge 8301 of lip 8300. This prevents an attempt to pry open the lid by preventing a sharp or flat - edged object from being inserted between the top of the enclosure and the lid, thereby adding supplemental tamper resistance. Thus, a lip engaging mechanism is provided to further enhance the tamper-resistant functionality of the bait station of the present invention. Note that the engaging lips 8300 and 8201 should preferably extend around a substantial portion of the periphery of the top of the enclosure to substantially eliminate any region around the periphery where prying of the lid can occur.

[1025] Also shown in Figure 8, integrally molded into lid 8200 are ridges 8602. These ridges add strength to the lid. Further, forced lateral shifting of the lid is substantially prevented because ridges 8602 when shifted laterally will contact and be blocked by walls 8900 from any substantial lateral shifting.

[1026] Although the present invention and its advantages have been described in detail, it should be understood that various changes, substitutions and alterations can be made herein without departing from the spirit and scope of the invention as defined by the appended claims. The invention achieves multiple objectives and because the invention can be used in different applications for different purposes, not every embodiment falling within the scope of the attached claims will achieve every objective. Moreover, the scope of the present application is not intended to be limited to the particular embodiments of the process, machine, manufacture, composition of matter, means, methods and

steps described in the specification. As one of ordinary skill in the art will readily appreciate from the disclosure of the present invention, processes, machines, manufacture, compositions of matter, means, methods, or steps, presently existing or later to be developed that perform substantially the same function or achieve substantially the same result as the corresponding embodiments described herein may be utilized according to the present invention. Accordingly, the appended claims are intended to include within their scope such processes, machines, manufacture, compositions of matter, means, methods, or steps.

[1027] What is claimed is: